

Special synchronization techniques

SO-6-0790

Drum replacement

You can replace or augment a recording of an acoustic percussion instrument with any of the timbres of the Synclavier using the technique of **drum replacement**.

Replacing a taped drum sound with a Synclavier timbre

You use the drum replacement technique to make a live drum recorded on tape sound with a Synclavier timbre.

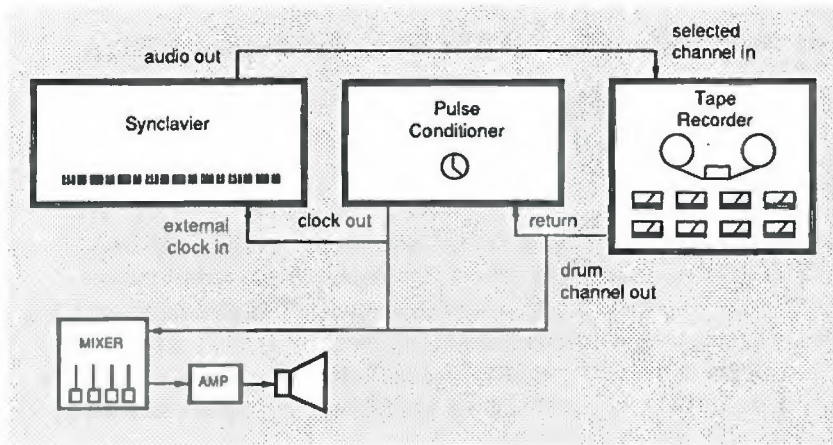
1. Record the live drum onto one track of a multitrack tape recorder.
2. Feed the signal of the drum track through a pulse conditioner into the EXTERNAL CLOCK IN jack of the Synclavier control unit, as shown on the opposite page.
3. Adjust the pulse conditioner.
4. Select the **external trigger** sync mode. (See "Selecting the external trigger mode" below.)
5. Select the desired Synclavier timbre and play a single note on the Synclavier keyboard.
6. Play back the drum track of the tape recorder.

Each pulse of the drum retriggers the note played on the Synclavier. Thus, the rhythmic pattern of the tape drum sounds with the Synclavier timbre.

Steps 3 and 4 are explained in more detail on the following pages.

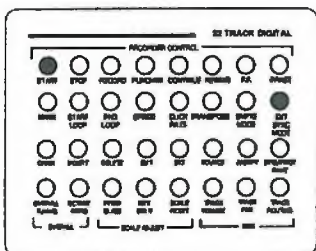
You can use the drum replacement technique in live performance, or you can record the live drum with the Synclavier timbre into the sequencer.

*Setup: drum
replacement*

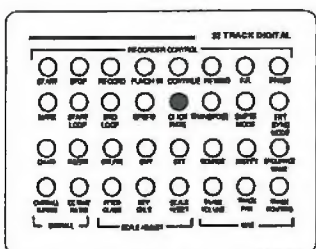


- Taped percussion track output to pulse conditioner RETURN.
- Pulse conditioner CLOCK OUT to sound system audio input (for verification of audio-to-pulse conversion).
- Taped percussion track output to sound system audio input (for comparison with pulse verify conversion).
- Synclavier audio output to selected track of tape recorder.

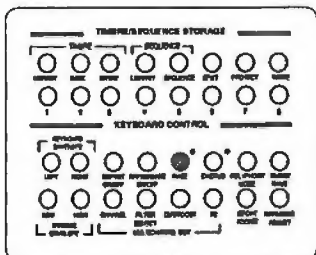
Drum replacement (con't)



EXT SYNC MODE and START
panel 2



CLICK RATE
panel 2



RATE
panel 4

Selecting the external trigger mode

Before initiating the drum replacement procedure, you must select the external trigger mode.

- Press and hold EXT SYNC MODE while you press START.

The display window shows

Ext Trigger: ON

The external trigger mode is one of four modes of the EXTERNAL CLOCK IN jack. In order for the drum replacement technique to work, all of the other modes must be turned off. If you have not been using the external synchronization, external click or external repeat modes, then the single step above is sufficient. If you have used any of these modes or are not sure, do the following steps before selecting the external trigger mode.

1. Make sure the EXT SYNC MODE button is unlit.
2. Press CLICK RATE. If the display window shows

EXTERNAL CLICK

press EXT SYNC MODE to turn off the external click mode.

3. Press the RATE button on panel 4. If the display window shows

EXTERNAL REPEAT

press EXT SYNC MODE to turn off the external repeat mode.

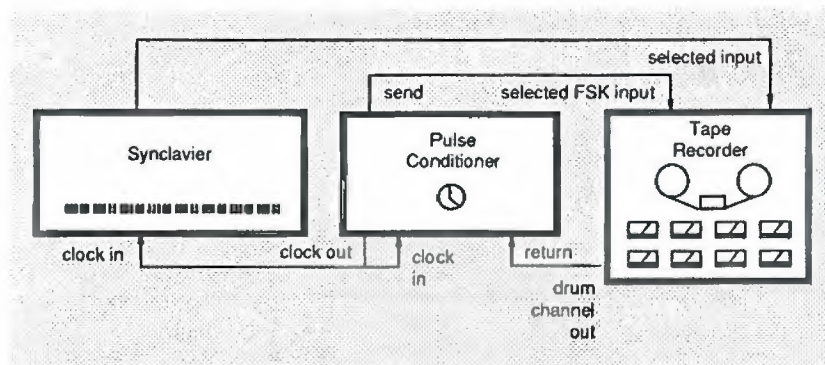
6.4 Studio operations

Recording the new percussion sound to tape

You can record the converted percussion sound directly to tape by connecting the audio output of the Synclavier to the selected input channel of the tape recorder as shown in the diagram on page 6.3.

You can simultaneously record FSK encoded percussion pulses on the tape recorder. To do this, add the connections shown on the opposite page to the set up described above.

Tape playback should be in the sync mode (monitoring the record head) so that the attacks are recorded in sync with the rest of the tracks.



Setup: recording FSK and percussion signals to tape

- Using a Y-connector or patch bay tie line, send the pulse conditioner CLOCK OUT to both the Synclavier EXTERNAL CLOCK IN and the pulse conditioner CLOCK IN.
- Connect pulse conditioner SEND to the selected tape track input.

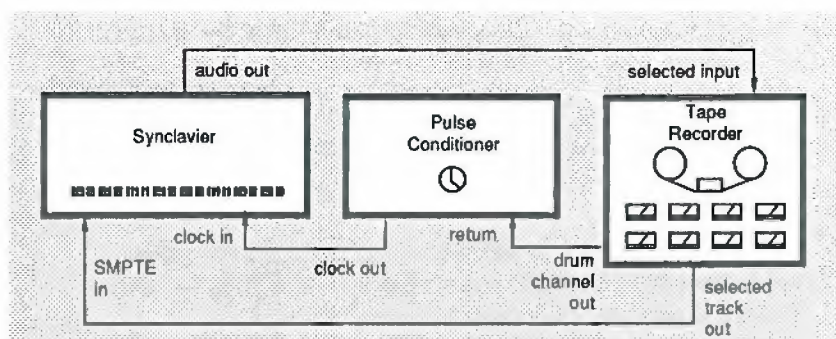
Drum replacement (con't)

Recording the new percussion track into the sequencer

You can also record the drum track with the Synclavier timbre directly into the sequencer. If you do this, use SMPTE synchronization so that the new drum track precisely matches other music recorded on tape. (See "Synchronizing to film and video.")

1. Set up the Synclavier, the pulse conditioner and the tape recorder as shown on the opposite page.
2. Select the appropriate SMPTE mode and enter the desired offset time.
3. Feed the SMPTE signal to the SMPTE IN jack on the Synclavier.
4. Rewind the tape and place all taped tracks in the repro mode (monitoring the play head).
5. Press the RECORD button.
6. Start the tape in the playback mode.

Setup: recording into the sequencer



- Connect Synclavier audio out to selected channel in of tape recorder.
- Connect tape SMPTE OUT to Synclavier SMPTE IN.
- Connect drum channel output to pulse conditioner RETURN.
- Connect pulse conditioner CLOCK OUT to Synclavier EXTERNAL CLOCK IN

6.6 Studio operations

Sync delay

At times you may want to delay the response of the Synclavier to the incoming sync pulse.

When you first select the beat mode, the upper half of the display window shows a number representing the current sync delay (0.00 by default). Dial in any sync delay from 0.0 to 75.0 milliseconds.

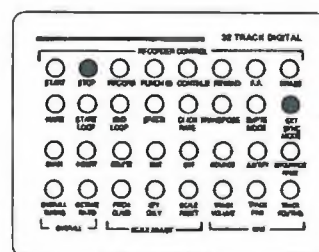
Turning off the external trigger mode

When you have finished using the drum replacement technique, you should turn off the external trigger mode.

- Press and hold EXT SYNC MODE while you press STOP.

The display window shows

Ext Trigger: OFF



EXT SYNC MODE and STOP
panel 2

External click tracks

You can use a sync pulse or percussive signal from an external source to control the click while recording on the Synclavier.

Recording a sequence to an external click

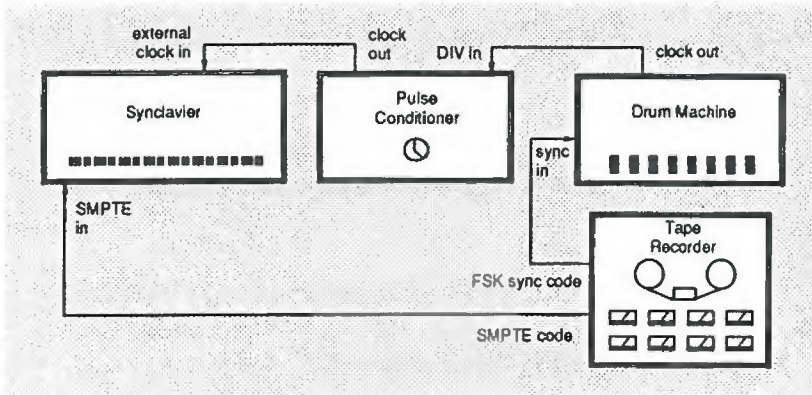
You can record a sequence into the sequencer using the signals from SMPTE-driven metronome, a drum machine or a live drum sound recorded on tape as the click track.

1. Feed the signal of the external click track through a pulse conditioner into the EXTERNAL CLOCK IN jack on the Synclavier control unit as shown on the opposite page.
2. Adjust the pulse conditioner.
3. Select the **external click sync mode**.
4. Select the appropriate SMPTE mode and offset time. (See "Synchronizing to film and video.")
5. Feed the SMPTE signal into the SMPTE IN jack on the Synclavier control unit.
6. Start the sources of the external click track and SMPTE.
7. Record the sequence in the justified mode.

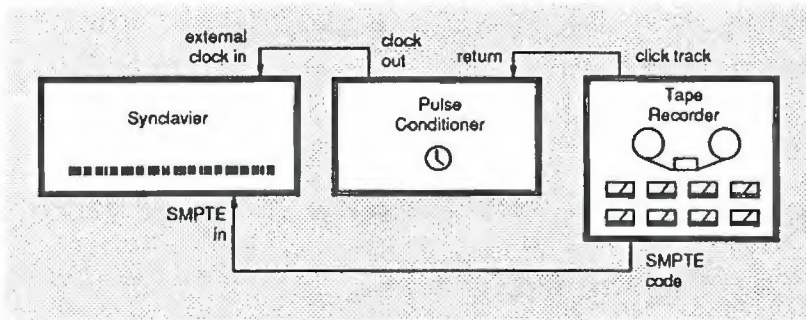
Steps 2 and 3 are explained in detail on the following pages.

You could also record the external click onto a track in the sequencer and then use that track as a click track to synchronize additional tracks recorded into the sequencer.

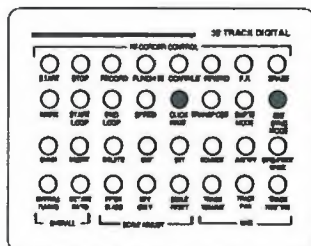
Setup: generating a click track with a drum machine or sync box



Setup: recording a click on tape



External click tracks (con't)



EXT SYNC MODE,
CLICK RATE
panel 2

Selecting the external click mode from the keyboard control panel

Before using an external signal for a click track, you must select the external click mode.

1. Make sure the external synchronization function is turned off. The EXT SYNC MODE button on the keyboard control panel should be unlit.
2. Press and hold CLICK RATE while you press EXT SYNC MODE.

The buttons light and the display window shows

EXTERNAL CLICK

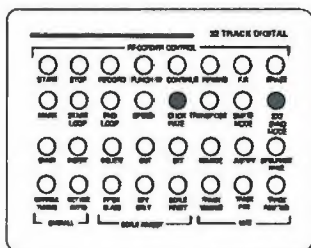
Turning off the external click mode from the keyboard control panel

To turn off the external click function

- Press and hold EXT SYNC MODE while you press CLICK RATE.

The display window shows

INTERNAL CLICK



EXT SYNC MODE,
CLICK RATE
panel 2

Selecting the external click mode from the Sequence Editor

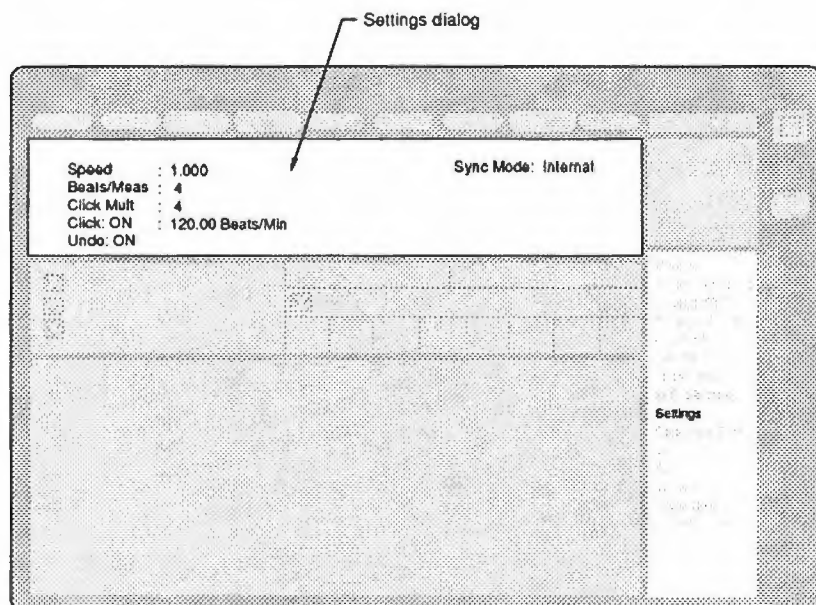
Before using an external signal for a click track, you must select the external click mode.

1. Click Settings in the Sequence Editor Commands panel.

The Settings dialog appears.

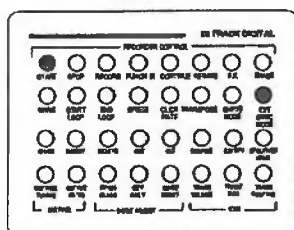
2. Step the Beats/Min switch (to the right of the click value) until Ext. Click is displayed.

To turn off the external click mode, step the same switch to another selection.



*The Sequence Editor
Settings dialog*

External click tracks (con't)

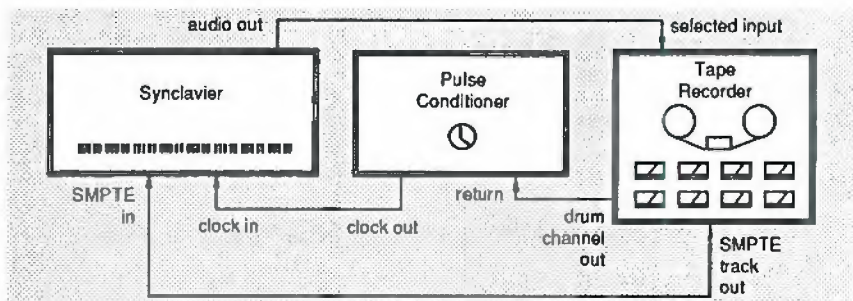


EXT SYNC MODE and START panel 2

Recording an external click track into the sequencer

You can record any of the previously described external clicks onto a sequencer track. You can also justify a recording to a click of variable tempos.

1. Set up the Synclavier, pulse conditioner and multitrack recorder as shown.



2. Select the appropriate SMPTE mode and enter a SMPTE offset time. (See "Synchronizing to film and video" for instructions on using SMPTE.)
3. Press and hold EXT SYNC MODE while you press START to select the external trigger mode. (See "Drum replacement" for cautions on selecting the external trigger mode.)

The display window shows

Ext Trigger: ON

4. Select a Synclavier timbre for the click track and play a single note on the keyboard.
5. Select a track and start recording in the sequencer.
6. Start the sources for the SMPTE signal and the external click.

The external click is recorded into the memory recorder.

Using the recorded click track to synchronize the sequence from the Sequence Editor

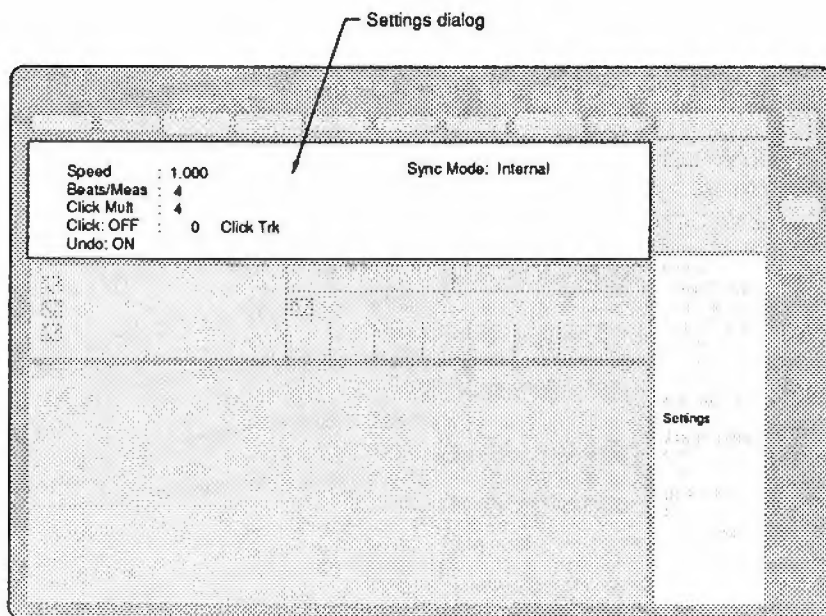
If you want to record a sequence using a click that has been recorded onto a click track, you must turn off the internal digital metronome.

1. Select the Settings command.

The following appears in the Settings dialog.

Click: ON 120.00 BEATS/MIN

2. Step ON to OFF.
3. Step BEATS/MIN to Click Trk.
4. Step the track number field to the desired track.



*The Sequence Editor
Settings dialog*

External click tracks (con't)

Using the recorded click track to synchronize the sequence from the keyboard control panel

If you want to record a sequence using a click that has been recorded onto a click track, you must turn off the internal digital metronome.

1. Press and hold CLICK RATE while you press the appropriate TRACK SELECT button.

The display window shows

CLICK: TRACK [number]

2. Press and hold TRACK VOLUME while you press the same TRACK SELECT button.

The display window shows

TRK [number] VOL:100.0

3. Use the control knob to set the track volume at zero.

When you start recording or playing back, the Synclavier emits a click for every note recorded on the selected track. The click numbers in the lower half of the display window follow the click track. The sound originally recorded is not heard.

Turning off the external click and external trigger modes

When you record a sequence using a click track from an external source, you use the external click mode. When you finish recording, you must turn it off.

- Press and hold EXT SYNC MODE while you press CLICK RATE.

The display window on the keyboard control panel shows

INTERNAL CLOCK

When you record an external click into the sequencer, you use the external trigger mode. When you finish recording, you must turn it off.

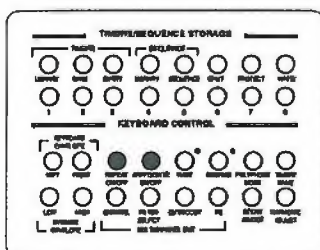
- Press and hold EXT SYNC MODE while you press STOP.

The display window on the keyboard control panel shows

Ext Trigger: OFF

External repeat and arpeggiate

You can control repeating notes and/or arpeggiating chord with external signals.



REPEAT/ARPEGGIATE
panel 4

Performing or recording to tape with externally driven repeat and arpeggiate functions

1. Feed the external signal through a pulse conditioner into the EXTERNAL CLOCK IN jack of the Synclavier control unit as shown on the opposite page.
2. If the signal is a live drum recorded on tape, adjust the pulse conditioner as explained in "Drum replacement."
3. Select the external repeat sync mode.
4. Press REPEAT or ARPEGGIATE or both, as desired.
5. Play on the keyboard.

Each incoming pulse triggers the next note when the repeat function is turned on; each pulse triggers the next note of the chord when the arpeggiate function is turned on.

Selecting the external repeat mode

Before performing or recording with the repeat and arpeggiate functions controlled by an external signal, you must select the external repeat mode.

- Press and hold the RATE button while you press EXT SYNC MODE.

The display window shows

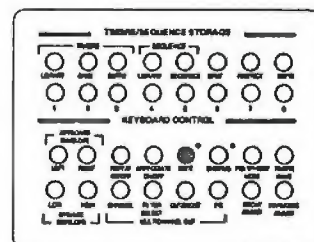
EXTERNAL REPEAT

The external repeat mode is one of four modes of the EXTERNAL CLOCK IN jack. In order for this technique to work, two of the other modes must be turned off. If you have not been using external synchronization or the external click modes, then the single step above is sufficient. If you have used either of these modes or are not sure, do the following steps before selecting the external retrigger mode.

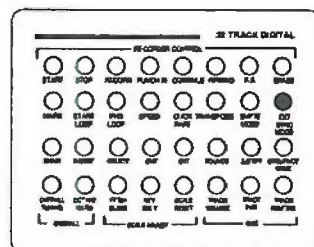
1. Make sure the external synchronization function is turned off. The EXT SYNC MODE button should be unlit.
2. Make sure the external click function is turned off. To check its status, press CLICK RATE. If the display window shows

EXTERNAL CLICK

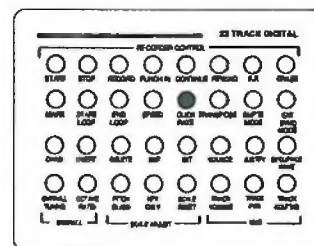
press EXT SYNC MODE to turn off the function.



RATE
panel 4



EXT SYNC MODE
panel 2



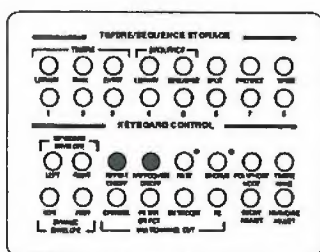
CLICK RATE
panel 2

External repeat and arpeggiate (con't)

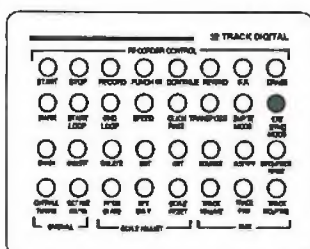
Using the external repeat with the sequencer

The external repeat function can be used with the sequencer provided SMPTE synchronization is also used. You need a SMPTE metronome or some other source of SMPTE and trigger pulses that are synchronized.

1. Feed the trigger pulse into the EXTERNAL CLOCK IN jack.
2. Feed the SMPTE time code into the SMPTE IN jack.
3. Record into the sequencer using SMPTE.
4. Feed the repeat/arpeggiate pulses into the Synclavier during playback as well as record.



REPEAT/ARPEGGIATE
panel 4



EXT SYNC MODE
panel 2

Turning off the external repeat mode

When you have finished using the external repeat mode, you should turn it off so that it does not interfere with other external sync modes.

- Press and hold the RATE button on panel 4 while you press EXT SYNC MODE.

The display window shows

INTERNAL REPEAT